



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,554	08/01/2003	Yutaka Takano	9319H-000530	2576
27572	7590	06/21/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			HSIEH, SHIH WEN	
P.O. BOX 828				
BLOOMFIELD HILLS, MI 48303			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,554

Applicant(s)

TAKANO ET AL.

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-7 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 3-5 is/are allowed.
 6) ☒ Claim(s) 2, 6 and 7 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 2-14-05.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

Response to Amendment

Claim Objections

1. Claim 6 is objected to because of the following informalities:

Line 5, page 5 of 11, please change 'said carriage' into "a carriage" to correct a minor lack of antecedent basis problem.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 2, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida (US Pat. No. 6,561,606 B1 corresponding to JP 2001-162889 disclosed in IDS dated Aug. 1, 2003).

In regard to:

Claim 2:

Yoshida teaches in his fig. 19:

A liquid droplet ejection apparatus comprising:

A function liquid droplet ejection head (H1001) disposed such that a nozzle surface thereof lies in parallel with a workpiece (P);

gap measuring means (5) for measuring a workpiece gap between a workpiece surface and a nozzle surface, refer to col. 23, lines 42-46; and

gap adjusting means (12) for adjusting the workpiece gap based on a result of measurement by said gap measuring means, said adjusting means being made by relative movement of said function liquid droplet ejection head and said workpiece in a vertical direction, refer to col. 23, lines 1-36,

wherein said function liquid droplet ejection head is mounted on a sub-carriage (M4001), and wherein said gap adjusting means comprises:

a base (not shown in fig. 9 and 19) which supports said sub-carriage in a manner slidable in a vertical direction, refer to col. 23, lines 19-31;

an actuator (2) which is fixed to said base, refer to col. 23, lines 31-33;

a male screw (1) member which is rotated in one direction and in an opposite direction by said actuator, refer to fig. 19 for directions of lead screw rotation; and

a female screw member (not numbered, however, is the one attached to the carriage and meshed with the lead screw) which is provided in said sub-carriage so as to engage in a screw manner with said male screw member.

Claim 6:

A liquid droplet ejection apparatus comprising:

A function liquid droplet ejection head (H1001) disposed such that a nozzle surface thereof lies in parallel with a workpiece (P);

gap measuring means (5) for measuring a workpiece gap between a workpiece surface and a nozzle surface, refer to col. 23, lines 42-46; and

gap adjusting means (12) for adjusting the workpiece gap based on a result of measurement by said gap measuring means, said adjusting means being made by relative movement of said function liquid droplet ejection head and said workpiece in a vertical direction, refer to col. 23, lines 1-36,

wherein said function liquid droplet ejection head is mounted on said carriage (M4001), and wherein said gap adjusting means comprises:

position measuring means for measuring a position of the workpiece in a vertical direction, said position measuring means being mounted on said carriage; and

computing means for computing the workpiece gap based on a result of measurement by said position measuring means.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above. In this claim, position means is still the element (5), and the computing means is the CPU (E1001), refer to figs. 21 and 22 and col. 24, line 41+.

Claim 7:

A liquid droplet ejection apparatus comprising:

A function liquid droplet ejection head (H1001) disposed such that a nozzle surface thereof lies in parallel with a workpiece (P);

Art Unit: 2861

gap measuring means (5) for measuring a workpiece gap between a workpiece surface and a nozzle surface, refer to col. 23, lines 42-46; and

gap adjusting means (12) for adjusting the workpiece gap based on a result of measurement by said gap measuring means, said adjusting means being made by relative movement of said function liquid droplet ejection head and said workpiece in a vertical direction, refer to col. 23, lines 1-36

wherein said workpiece is set in position on a worktable, and wherein said gap adjusting means comprises:

position measuring means for measuring a position of the workpiece and a position of the worktable in a vertical direction; and

computing means for computing the workpiece gap based on a result of measurement by said position measuring means.

Rejection:

This claim is rejected on the basis as set forth for claims 2 and 6 discussed above. In this claim, worktable is represented by the platen (M2001, fig. 3).

Allowable Subject Matter

4. Claims 3-5 are allowed.

Art Unit: 2861

5. The indicated allowability of claims 6 and 7 is withdrawn in view of the newly discovered reference(s) to Yoshida (US Pat. No. 6,561,606 B1). Rejections based on the newly cited reference(s) are set forth above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Response to Arguments

7. Applicant's arguments with respect to claims 2, 6 and 7 have been considered but are moot in view of the new ground(s) of rejection.

US 6,561,606 B1 has been used in this office action.


Art Unit: 2861

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

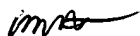
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH


June 20, 2005

10/ 632,554

347/37

②

③



⑥

⑦